Bayerisches Landesamt für Denkmalpflege · Deutsche Limeskommission

C. Sebastian Sommer, Suzana Matešić (Hrsg.)

Limes XXIII

Proceedings of the 23rd International Congress of Roman Frontier Studies Ingolstadt 2015

Akten des 23. Internationalen Limeskongresses in Ingolstadt 2015

BEITRÄGE ZUM WELTERBE LIMES

Sonderband 4/I

2018 · In Kommission: Nünnerich-Asmus Verlag · Mainz

ÁNGEL MORILLO CERDÁN, VICTORINO GARCÍA MARCOS AND JAVIER SALIDO DOMÍNGUEZ

The Military *vicus Ad legionem* – Puente Castro, León (Hispania citerior)

ZUSAMMENFASSUNG

León liegt im Norden der Kastilischen Ebene, am Südhang des Kantabrischen Gebirges. Der vorliegende Artikel behandelt die Auffindung und archäologische Auswertung verschiedener Strukturen, die in den Jahren 2000 und 2001 südöstlich der Stadt León, auf der anderen Seite des Flusses Torio, in der Nähe des heute als Puente Castro bekannten Viertels entdeckt wurden. Die Strukturen sind Teil des als *Ad Legionem* bekannten Lagervicus, der entlang der ersten Route des Itinerarium Antonini (*De Italia in Hispanias*) errichtet wurde und in unmittelbarer Abhängigkeit zum benachbarten Lager der *legio VII gemina* stand. Unsere Forschungen hier ermöglichten es, Vermutungen zur Nutzung der angetroffenen Baustrukturen anzustellen und dabei mindestens zwei jüngere Bauphasen herauszuarbeiten sowie das Areal in städteplanerischer, typologischer und funktioneller Hinsicht zu analysieren.

ABSTRACT

León is situated in the north of the central plateau of Spain, on the southern slope of the Cantabrian Mountain range. This work deals with archaeological identification and analysis of various structures discovered in 2000 and 2001 southeast of the city of León, on the other side of the River Torio and next to what is known today as the Puente Castro quarter [1]. These structures were once part of a secondary military *vicus* called *Ad Legionem*, which was set up along the first route of the Antonine Itinerary (*De Italia in Hispanias*) and was closely dependent on the neighbouring *legio VII gemina* camp. This research has enabled us to speculate on the potential use of structures in that area, identify at least two later construction phases and analyze the area's urban planning, typology and function.

ARCHAEOLOGICAL INVESTIGATIONS 2000–2001

In September 2000, as a result of the construction of the southern stretch of the ring road of León, a Roman settlement was discovered in San Froilán Avenue (the old cemetery road) in the Puente Castro quarter of the city of León. This enclave is located approximately 2.5 km southeast of the city, on a river terrace on the Torio's left bank, some 500 to 600 m from its confluence with the Bernesga south of Puente Castro (Fig. 1).

Archaeological investigations led by J. Carlos Álvarez Ordás and carried out in two phases between October 2000 and August 2001 shed light on remains of orthogonal building structures facing southeast[2]. Archaeologists have not yet been able to access most of the material, along with the excavation report, photographs and complete surveying records. However, the interest in this settlement justifies a "rescue" operation, in order to get as much insight as we can on this archaeological site, especially in the light of the current lack of information on the subject. Based on partially preserved evidence, this research analyzes the architecture and urban planning behind the excavated structures.

The results of these excavations revealed that this was not a rural settlement, as speculated at first, but most likely a secondary military agglomeration, the so-called *ad legionem VII geminam* (Fig. 2). Based on the objects found

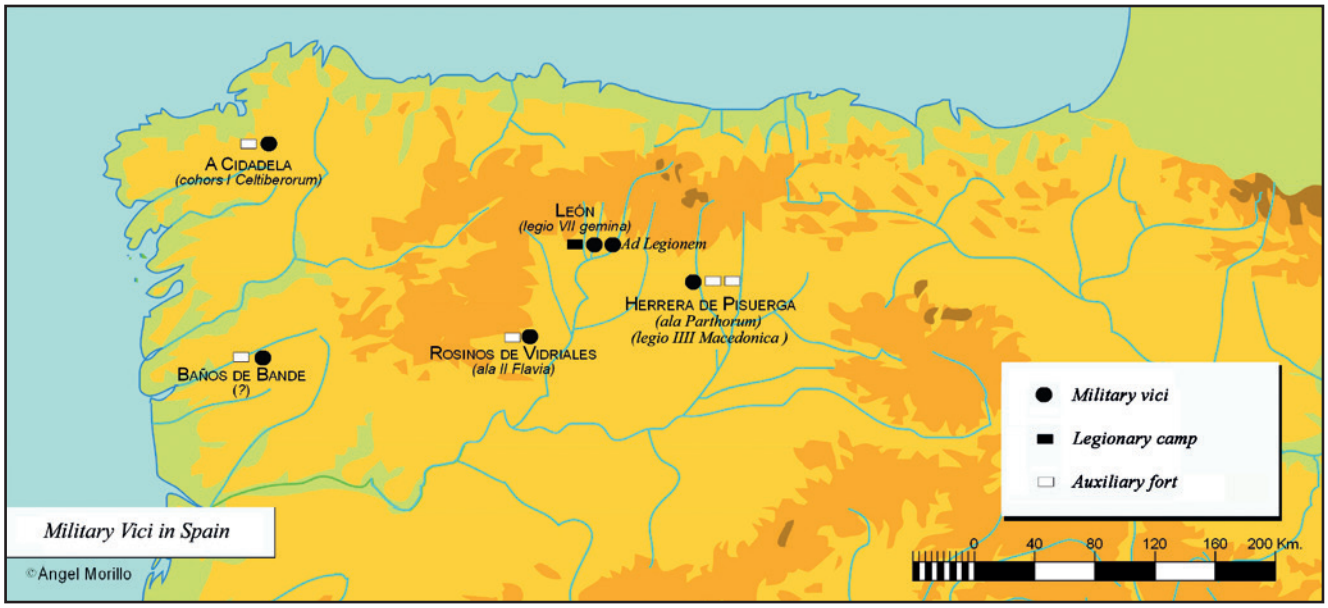

Fig. 1: Distribution map of Roman *vici* in northern Spain (Morillo/Salido 2015, 520, Fig. 1).

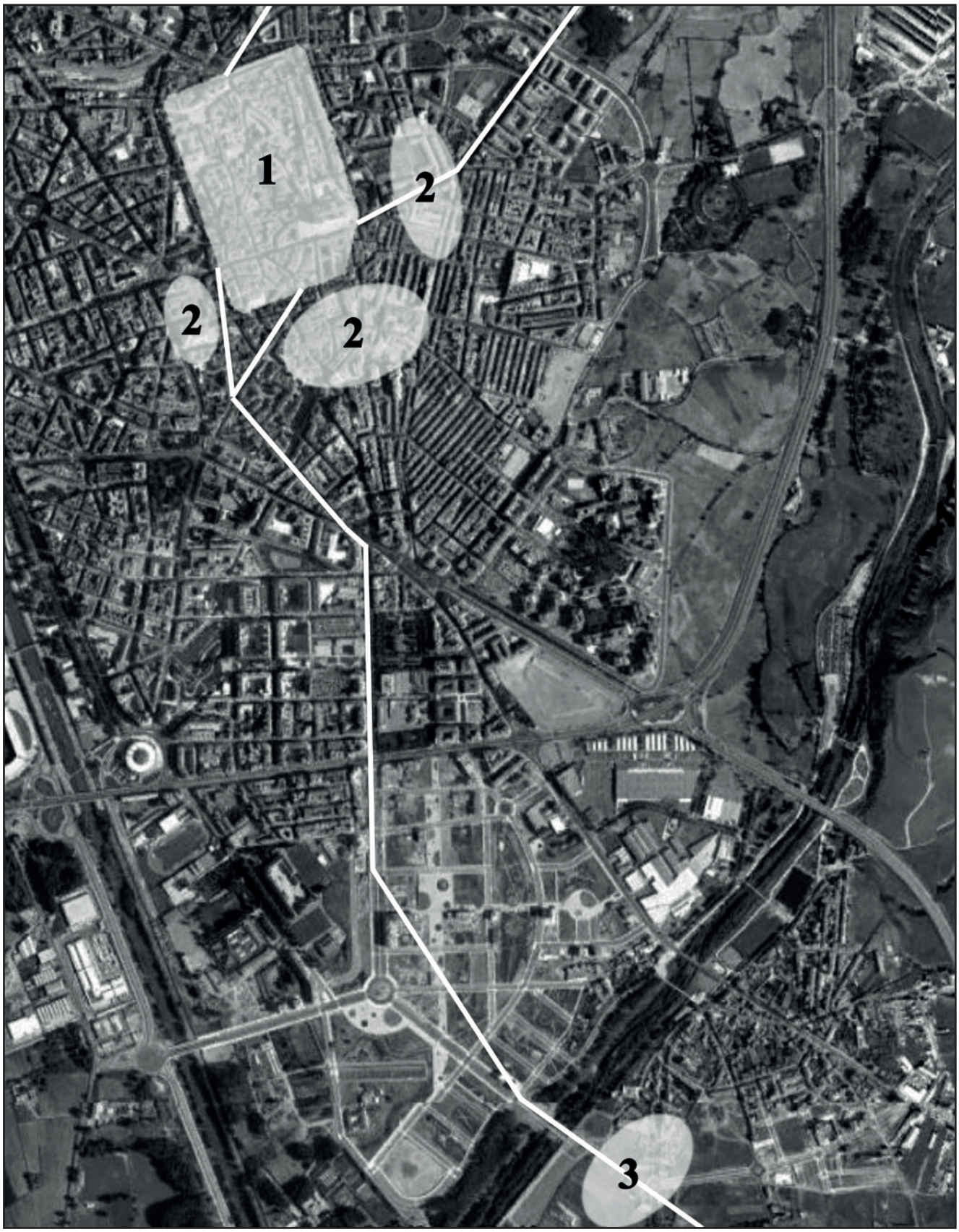

Fig. 2: Roman legionary fortress of *VII gemina* at León (1) with the *vicus militaris* (2) and the road network. Secondary military *vicus* of Puente Castro (3) (A. Morillo).

during the excavation, archaeologists were able to date the lifespan of the settlement from the last quarter of the 1st century AD to the mid-third quarter of the 3rd century AD, which is when it was seemingly abandoned. The biggest find, however, was the discovery of dozens of hidden *antoniniani* in one of the rooms of Block 1. These were found in a linen bag[3]. In the same Block 1, we should also mention a set of bronze surgical instruments that were found in various parts of the settlement[4].

One of the main problems with analyzing this settlement has been the lack of available data. During the excavations, archaeologists only examined the surgical instru-

Fig. 3: Plan of the archaeological investigations (2000–2001) with the modern road to the cemetery (A. Morillo).

ments in depth and made some small side notes on the rest of the objects discovered on site[5]. Similarly, there was some material published on the remains of the linen bag in which the *antoniniani* were found[6], along with some general remarks on the settlement itself[7]. As mentioned earlier, we were not able to gain access to the excavation report[8]. However, based on the analysis of available material, we did reach some conclusions discussed in the following pages.

DESCRIPTION OF THE STRUCTURES

The first excavation stage of the 2000–2001 investigations was centered on the east side of the cemetery road. There are no surveying records or archaeological reports from this excavation phase, which is why we were only able to rely on aerial images taken at the end of that excavation stage. Construction remains, namely cobblestone and clay foundation edges, indicate a northwest-southeast alignment of the settlement.

There are more data from the second excavation phase (February–August 2001), including an architectural plan and some other documentation. During this stage, archaeological works were centered around the area west of the site uncovered during the first stage, on the other side of the cemetery road. As in the first phase, archaeologists uncovered little more than foundation remains, almost level with the road surface of the Roman period. However, despite the poor conditions in which these remains were found, we were able to conclude that the building structures were organized in an orthogonal scheme with a northwest-southeast alignment, corresponding to those found on the other side of the road, meaning they were undoubtedly a part of the same urban layout. The analysis of building techniques and spatial organization of the buildings offer a fundamental insight into their use and functionality. In addition, archaeologists were able to identify at least three construction phases. The lack of any sanitation facility such as sewage systems leaves unanswered questions, as these were rarely preserved, since they were close to the ground surface and often at the same level as the traffic (Fig. 3).

FIRST CONSTRUCTION PHASE

As mentioned earlier, there are only foundations of which some were conserved to 50 cm in width and height, made up of two or three layers of river pebble stones bound by clay, without any evidence of lime mortar use. Adobe and mud walls would have been erected on top of these foundations.

Based on the wall foundations, we can reconstruct the site's layout, identifying various rectangular building blocks separated by alleys, two of which have been almost fully and the other two partially uncovered. The biggest structure on site was a house (Block I) located in its southeastern part. This was a large residence with a rectangular surface of some 500 m^2. The wall that surrounded the block on the south side created an alleyway that was 1 m wide, paved with small and medium-sized river pebble stones bound and rolled flat with a little mixed lime. On the other side of this dividing alleyway, there are a couple

of metres of a new foundation on the side of the following block (Block II). At the front of the building, there is an entrance into the residence or *fauces* that was 12 m wide, leading into a spacious corridor (3 m wide and 14 m long) and marking the axis of the residence. This corridor featured a series of three symmetrical rooms on each side and undoubtedly provided direct access to these rooms via doorways, traces of which have been found on site. The presence of two series of frames or door jambs on each side of the corridor, three of which have been preserved *in situ*, confirms that this hallway was compartmentalized and closed by two side doors that separated the public or outside area from the residence itself. The first section of the corridor that opened up into the street corresponds in length to two rectangular rooms that opened up to the front of the building and were probably used as shops or *tabernae.* In a partially excavated room located further to the southeast archaeologists found a small hidden batch of *antoniniani*. These rooms appear to have had access to the corridor via doorways, which would indicate that this area was open to residential circulation.

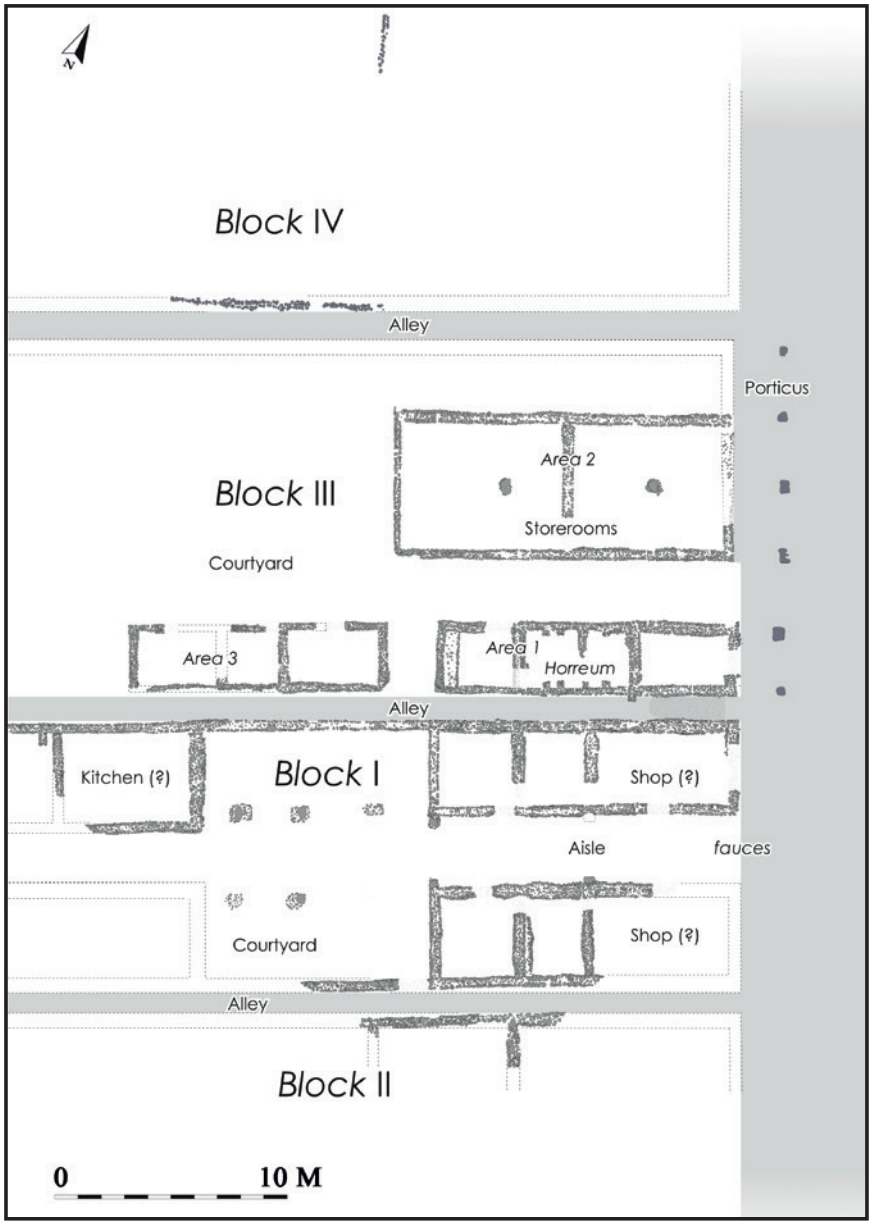

Fig. 4: Military *vicus* of Puente Castro-Ad legionem. First Phase (A. Morillo).

From the shops or *tabernae* in the eastern part of the site, one could directly access the two connected rooms by entrances on opposite sides. The two rooms on opposite sides and closest to the courtyard in the west were 3.5 m square. One could access them from the corridor, through the two entrances mentioned above. Similarly, there were two doors facing one another in that first section of the corridor which was closed off by doorways. At the end of the corridor, one could access a spacious 10 m x 12 m courtyard with a *porticus*. It has six preserved foundation blocks.

The discovery of various medical and surgical objects may point to the fact that this was a doctor's residence[9]. This was also the case with one of the rooms in the *vicus* next to the legionary camp at *Argentorate* (Strasbourg), where similar objects were recovered[10]. Perhaps there was a connection between these instruments and the hidden *antoniniani* as a sign of the owner's economic status (Fig. 4).

To the southwest of the courtyard, archaeologists found yet another set of big rooms, partially excavated. The northernmost room, owing to its size, the animal remains found in it and its location next to the courtyard, ideal for the release of smoke, seems to have been used as a domestic room (i. e. a kitchen or *culina*).

To the northwest of this house, we find another block (Block III), separated by a 1 m wide alleyway with a north-east-southwest direction. Its shape, dimensions and internal layout are in some ways similar to the one mentioned before, including a spacious corridor that starts at the north-eastern entrance, from which a set of rooms opens up on both sides.

Southeast of this 3 m wide and 14 m long corridor, there were three rooms lined up with their shorter side parallel to the front of the building (Area 1), just as in the other house. The easternmost room that opened up to the front of the building may have been a shop. The central room, on the other hand, was 5 m long and 2.7 m wide. The construction technique used in building this room is very interesting, since it featured a small knee-wall and pilasters attached to the walls, probably serving as an internal support system for a wooden flooring or *tabulatum.* This tells us the room was probably used for grain storage (*horreum*). The same is probably true for the westernmost room, connected to the corridor and featuring the only doorway to the central room. There is a platform made of

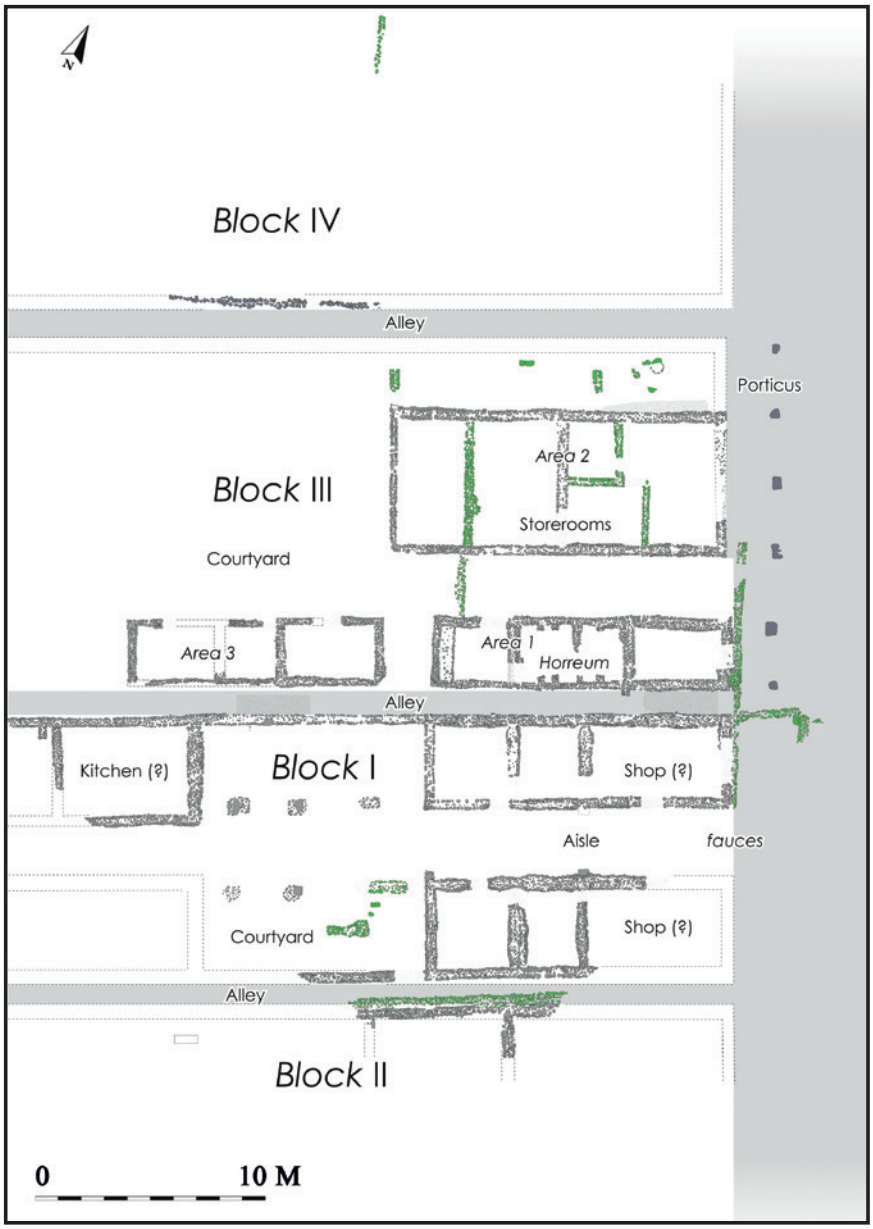

Fig. 5: Military *vicus* of Puente Castro-*Ad legionem*. Second Phase (A. Morillo).

river pebbles bound with mud and some lime attached to its side walls which seemingly served as a support for some sort of platform. This support system is made of a double wall parallel to the outside perimeters, allowing for an attic to be placed on top.

The discovery of a large fragmented millstone, measuring 60 cm in diameter and 50 to 60 cm in height (*meta*) found in the vicinity of this room, also points to the fact that this area was used for milling. We should also mention that the dimensions of this *mola* make it much larger than the ones discovered hitherto in Hispania, which average 30 cm[11]. This points to a large-scale production that was likely linked to a *pistrinum*, a mill used for flour and bread production.

On the other side of the corridor, archaeologists found various rooms (so-called Area 2) that have been difficult to analyze, because they seem to have been built from perishable materials and undergone numerous renovations in later periods. At first, we come across two spacious rooms, almost perfectly squared, 7 m long on each side and separated by a partition wall with a doorway. Both rooms feature a 60 m x 60 cm central pillar that supported the ceiling. Their north-western side may have been used as a *porticus* or a service area that was 2.5 m wide and surrounded by a wall adjacent to another alley of similar dimensions to the other ones. A little further westwards we once again come across the foundations of a perimeter wall of a new block located on the other side of the alley (Block IV).

The last excavated area lies to the west of this building. At the end of a corridor, on the outside, we find a distribution courtyard paved with cobblestone and lime grout, which may have been used for agricultural purposes. The courtyard leads to another building block on the south-western side (Area 3), consisting of three rooms, each approximately 2.2 m wide, the two side ones being rectangular, while the one in the middle was square. These rooms have the same orientation as the rest of the building.

The structures located in two of the best documented blocks were aligned to the northeast, opening up into the street from which the entire urban layout spread out. Block I had no *porticus* and seemingly opened up directly onto the street. However, in the case of Block III, archaeologists found six support columns 2 m from the building and running parallel to it. They measured 60 m x 60 cm at their base, which indicates there used to be a *porticus* that sheltered the pedestrians. These support columns were reinforced with bases running parallel to the street without a visible wall and formed a part of the *porticus* infrastructure to give it greater structural stability, as well as perhaps to accommodate the channels into which water would drain from the *porticus*.

This street, running northwest to southeast, actually seems to be the first Roman road of the Antonine Itinerary – *De Italia in Hispanias*. This road would have been 7.5 m wide including the porticoes with a little less than 6 m for traffic.

SECOND CONSTRUCTION PHASE

Even if the lack of stratigraphic and excavation records limits us in developing conclusive hypotheses on the structures' functionality, use and chronology, their overlapping allows us to distinguish at least two construction phases that took place after the original construction had been completed (Fig. 5).

The first renovation mainly affected Block III, which seems to have been used for artisanal and agricultural purposes. Two square rooms seemingly sustained by a central col-

umn located in the north-western part of the block underwent significant renovations due to their infrastructural complexity. The *porticus* or the working space located to the northwest of these rooms also seems to have undergone some sort of renovation, as indicated by various walls running northeast to southwest that divide this space. The renovation was done at the expense of the public road.

With regards to Block I, there is also evidence of a use as a working space of the southernmost part of the courtyard.

THIRD CONSTRUCTION PHASE

At a later period, which cannot be precisely defined, the entire *porticus* of Block III was demolished and the street pavement was extended all the way to the front of the block, replacing the pillars or columns. Scanty construction remains in the northeast revealed that this street was paved with small and medium-sized cobblestones.

At the same time, the entire front of Block III was being renovated, including the reconstruction of walls and the construction of a spacious entryway leading onto the street in Area 2. The hall located to the northwest of Area 2 in Block III was also affected by renewals. In the process different rooms were created next to the main corridor. The two rectangular rooms on the other side of the courtyard in Block III (Area 3) were demolished and a new rectangular room was built in that location.

This construction phase had very little effect on Block I, where we see traces of minor renovations southeast of the courtyard (Fig. 6).

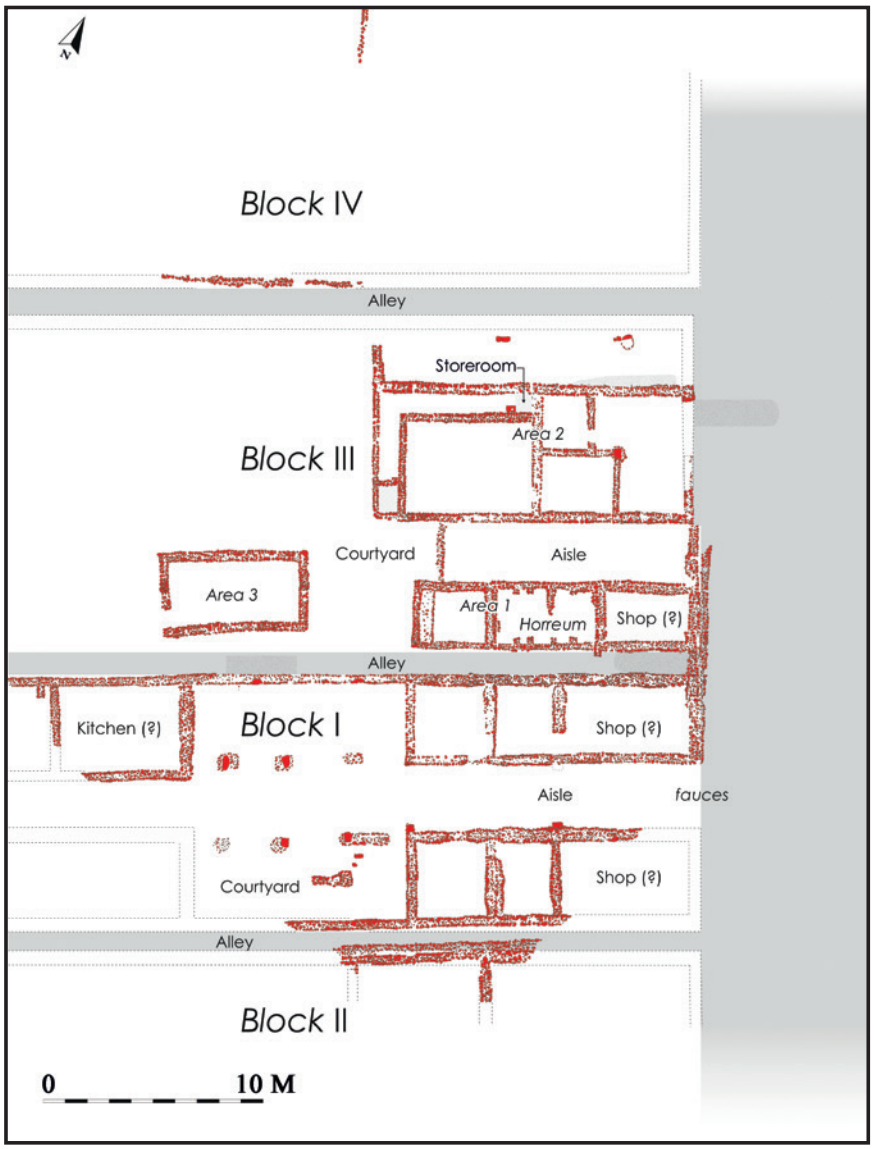

Fig. 6: Military *vicus* of Puente Castro-*Ad legionem*. Third Phase (A. Morillo).

ARCHITECTUAL AND URBANISTIC ANALYSIS AND INTERPRETATION

URBAN PLANNING AND SPACIAL ORGANIZATION

The military *vicus* at Puente Castro showcases characteristics typical of settlements we commonly find along the northern borders of the Empire, often almost completely cut off from the civilian *vici* or secondary agglomerations in Spain[12].

We were able to verify that there was a street used as a central axis in urban planning, onto which various longitudinal plots opened up and at least four longitudinal blocks separated by 1 m wide alleyways whose frontal sides opened up onto a road going from the northwest to the southeast (Fig. 7). The construction model behind these types of compounds varies a lot from one settlement to the next, which led C. S. Sommer to decidedly reject the possibility of there being a "basic pattern" used by the Roman army when building these settlements[13]. In general, the compounds or blocks would be anywhere between 6 and 12 m wide, corresponding to the parameters of the model used in Puente Castro. This could point to standardized urban planing, meaning there were certain urbanistic and building regulations in place, possibly introduced by the military authorities, which were a part of some sort of land registry[14].

Another of the distinctive construction features of the site at Puente Castro is the presence of alleyways between different blocks, thus avoiding the use of partition walls. This urban planning practice, while not very common in continental military *vici*, is often seen in these types of settlements in Britannia, where the alleys provided access from the main street to the backs of the buildings[15].

The structures identified in the excavated blocks at Puente Castro do not seemingly correspond to the construction model of buildings with a longitudinal floor. The buildings that occupy almost the entire excavated blocks in the *vicus* at Puente Castro correspond to a fairly uncommon construction model, but one that has been

Fig. 7: General view of the investigations from the centre of the alleyway between Block I (right) and III (left) (V. García Marcos).

well documented in other secondary military agglomerations along the northern borders and is generally known as a "complex buildings" ("Komplexbauten")[16]. Complex buildings are fundamentally different from the longitudinal houses ("Streifenhäuser" or strip buildings), because the residence is located in one of the settlement plots and includes an extended peristyle-like courtyard. The building complex found at Puente Castro is very similar in its floor plan to the buildings A/B 4c, H/I 3e/f and H/I 4 in the *vicus militaris* at Ladenburg (*Lopodunum*). The first of these buildings features an extended courtyard, whereas the other two (H/I 3e/f and H/I 4) are structured around a courtyard similar to the one found on the site in Puente Castro. Construction models of residences with similar peristyles were found in other *vici*, such as the one at Kempten[17], building M at Rottweil[18] and a building at the Eugen-Bolz-Platz in Rottenburg[19]. The construction complex at Puente Castro also shares similarities with Building 19 at Walheim[20] and the *vicus* at Wimpfen[21].

The buildings on these sites often included porches or simple rooftops opening up onto the street, some 2 m wide, to offer shelter to pedestrians and protect them from harsh weather conditions while they walked around or shopped. These types of structures have been found in Britannia, Raetia, as well as Germania superior and inferior[22]. Six support columns located 2 m from the front of a residence in Block II at Puente Castro confirm that there was the same sort of structure on site, typical of more commercial areas. However, Block I, which used to be a residence and perhaps a doctor's office, does not feature this type of structure.

SETTLEMENT TYPOLOGY

The layout of the buildings and their floor plans indicate this was a street-type settlement. According to the typology developed by C. S. Sommer in many of his works on the military *vici*, it would correspond to what he calls street-type, ribbon-type or through-road type settlements, which were all built adjacent to a Roman road[23]. This type of secondary agglomeration was most common in regions such as Britannia[24], even though it was also found next to *castella* on the Rhine-Danube border, such as Zugmantel, Stockstadt, Oberdorf, Ladenburg and Inheiden[25]. In the case of the *vicus* at Puente Castro, the settlement was centered on a road that started at the *porta praetoria* in the military camp, which may not have been a very common organization pattern at the time but was found in other provinces of the Empire[26]. In this context, we should emphasize the similarity between the topographic layout of and important civilian agglomerations at York and Chester. It would normally also be close to a river, including *ultra pontem*, like in the case of Puente Castro[27].

AD LEGIONEM MILITARY *VICUS*: IDENTIFICATION HYPOTHESIS

There is no doubt that the building structures identified in Puente Castro were a part of an important settlement whose characteristics match those of a military *vicus.*

The fact that there was a second military *vicus* little more than 2 km from the legionary camp, which was more than enough of a distance to distinguish this settlement from the one next to the camp, poses interesting questions. This combination of two military *vici* (or a *vicus* and a *canabae*) was much more common than people thought only a few years ago and is found in legionary camps at all border provinces[28].

The satellite military *vicus* at Puente Castro corresponds to the same model and pattern as the ones identified in *Carnuntum*[29]. Once again, there is a 2.2 km distance between the settlement and the *legio* camp. The population was established *ultra pontem*, on the other side of the River Torio.

Some years ago, I. Piso[30] published various inscriptions found at Pfaffenberg, next to the *Carnuntum* fortress, where the terms *intra leugam* or *intra leugam primam* are specifically mentioned. According to I. Piso, this was a strategic strip of land with a 1.5 mile radius (2.2 km) accommodating certain military facilities and the camp's necropolis, which would be under total military jurisdiction represented by the legate. The *leuga* as a distance measure was introduced in the Germanic, Gallic and Danubian provinces during the 2nd century AD and used together with the mile[31]. Recently, C. Gugl pointed out that the area corresponding to a *leuga* or the territory under the direct administration of a military unit would imply certain restrictions on the residents, possibly in aspects such as land ownership[32].

As mentioned earlier, the building structures in the *vicus* at Puente Castro were organized around a main road running from the northwest to the southeast. This road was 7.5 m wide and coincided with the route of the first road of the Antonine Itinerary, known as *De Italia in Hispanias*, which left the *legio* camp at the *porta praetoria* towards the southeast and headed for Gaul via the Northern Plateau. The trajectory of the first road of the Antonine Itinerary ends with a *mansio* called *Ad Legionem VII Geminam*, repeatedly identified with the actual capital of León or its vicinity[33]. The use of the accusative *ad* to refer to a *mansio* or *mutatio* was common in the Antonine Itinerary indicating that these settlements were located "next to" or "close to" the place mentioned in the accusative, in this case the *legio*[34]. This place is also mentioned in letter 67 that St. Cyprian from Carthage sent to the Christian communities at *Ad Legionem-Asturica* and *Emerita* in AD 254, which represents one of the first written records of Christianity in Hispania[35].

At present, we can definitely hypothesize that this settlement and the military *vicus* discovered in Puente Castro at one point were reduced in size[36]. The settlement at Puente Castro was abandoned shortly after St. Cyprian sent that letter, somewhere between AD 260 and 270. We can speculate that it may have been somehow linked to the unrest triggered by the establishment of the Gallic Empire, which briefly took control over Hispania's provinces. Undoubtedly, the abandoning of the *vicus* must have meant the disappearance of the *episcopus ad Legionem* as well, probably before the newer, more stable Christian administrative buildings were constructed in old cities and camps starting with Constantine's reign.

FINAL REMARKS

The results of the archaeological investigations in Puente Castro between 2000 and 2001 enabled us to analyze the architecture and urban planning of this secondary agglomeration or *vicus*, established at an important communication hub and functioning as a *mansio*, tightly linked to and dependent on the nearby legionary camp of the *legio VII gemina*. The layout of the buildings and standardized floor plans in the *vicus* point to the fact that this was a multi-functional settlement organized around the main road whose square or rectangular blocks were separated by alleys. The settlement was thus known as a street-type, ribbon-type or through-road type, structured around a Roman road, an organizational model typical of the *vici militares* in the Western Roman Empire.

The structures discovered on site belonged to various land plots, one of which was occupied by a house with an interior courtyard and the other by a large building complex ("Komplexbau" or complex buildings) with rooms used for various agricultural purposes (e. g. a *horreum*, other storage rooms and work areas). The building complex ran parallel to the first road of the Antonine Itinerary that went from the *Legio* camp to Gaul and onto which some buildings opened their porches.

Based on the abundant finds discovered on site and despite the fact we lack more detailed data on the excavation itself, as lots of records have been lost, we can determine that this *vicus* existed from mid- or late 1st century AD to approximately AD 260–270, which is when it was definitely abandoned.

Ángel Morillo Cerdán
Department of Prehistory, Ancient History and Archaeology
Faculty of Geography and History
Universidad Complutense de Madrid
28040 Madrid
Spain
amorillo@ghis.ucm.es

Victorino García Marco
Archaeological Research City of León
Plaza Puerta Castillo
24003 León
Spain
victorino.garcia@aytoleon.es

Javier Salido Domínguez
Department of Prehistory, Ancient History and Archaeology
Faculty of Geography and History
Universidad Complutense de Madrid
28040 Madrid
Spain
javiersd@ucm.es

1 This study has been undertaken as part of the research project entitled Military camps and territories in Hispania (HAR2011-24095). It was commissioned by the Ministerio de Ciencia e Innovación, and has been coordinated by Prof. A. Morillo since 1st January 2012.

2 The most recent archaeological investigations dozens of metres to the south were undertaken in 2011 by V. García Marcos, city archaeologist of León, and confirm the large size of the settlement.

3 Morillo/Rodríguez Peinado 2013.

4 Álvarez Ordás et al. 2000/2001.

5 Álvarez Ordás et al. 2000/2001.

6 Morillo/Rodríguez Peinado 2013.

7 Morillo 2012; Morillo et al. 2014.

8 Data on the excavated structures, including the aerial images and digitized blueprint presented in this article, are largely unpublished and were provided to us by the responsible director of the excavation team, J. C. Álvarez Ordás.
9 Morillo et al. 2014.
10 Kern 1998, 205.
11 Salido/Bustamante 2014, 41.
12 Pérez Losada 2002.
13 Sommer 1988, 568–569.
14 Sommer 1989, 475; Sommer 1999, 87–88.
15 Sommer 2006, 125–126.
16 Kaiser/Sommer 1994, 377–378.
17 Kleiss 1962, 13–15.
18 Sommer/Lauber 1988, 92; Sommer 1989, 129–131.
19 Heiligmann/Geppert 2003.
20 Planck 1991, fig. 42; Sommer 1988, 91–93; Kortüm/Lauber 2004, 48–52, 64.
21 Filgis 2002, 396.
22 Sommer 2008, 117.
23 Sommer 1997; Sommer 1999, 81; Sommer 2006, 97–102.
24 Sommer 2006, 101.
25 Sommer 1997, 43.
26 Sommer 1988, 528–547.
27 Evans 2000, 502.
28 Gugl 2013, 175–186.
29 Doneus et al. 2013.
30 Piso 1991, 141; Piso 2003, 12.
31 Sommer 2004, 313–314.
32 Gugl 2013, 175–186.
33 Loewinsohn 1999, 11–12.
34 Roldán 1966, 109–120.
35 Teja 1990.
36 Morillo 2012, 244; Morillo et al. 2014, 127.

BIBLIOGRAPHY

Álvarez Ordás et al. 2000/2001 · J. C. Álvarez Ordás/P. Rodríguez González/N. Martínez Murciego, Instrumental médico procedente de la excavación del yacimiento de época romana de la carretera del cementerio (Puente Castro, León). Una aproximación. Lancia 4, 2000/2001, 141–158.

Burnham/Wacher 1990 · B. C. Burnham/J. Wacher, The Small Towns of Roman Britain (London 1990).

Casey et al. 1998 · P. J. Casey/B. Hoffmann/P. Bidwell/S. Cottam/A. T. Croom/A. M. Donaldson/M. Green/A. Gwilt/J. Rackham/D. Taylor/R. S. O. Tomlin, Rescue Excavations in the 'Vicus' of the Fort at Greta Bridge, Co. Durham, 1972–74. Britannia 29, 1998, 111–183.

Doneus et al. 2013 · M. Doneus/C. Gugl/N. Doneus (eds.), Die Canabae von Carnuntum. Eine Modellstudie der Erforschung römischer Lagervorstädte. Von der Luftbildprospektion zur siedlungsarchäologischen Synthese. Der römische Limes in Österreich 47 (Vienna 2013).

Evans 2000 · E. Evans, The Caerleon Canabae. Excavations in the Civil Settlement 1984–90 (London 2000).

Faber 1994 · A. Faber, Das römische Auxiliarkastell und der Vicus von Regensburg-Kumpfmühl. Münchner Beiträge zur Vor- und Frühgeschichte 49 (Munich 1994).

Filgis 2002 · M. N. Filgis, Holzfachwerkbauten im Kastellvicus von Wimpfen, Neckar-Odenwaldlimes. Topographie, Siedlungsstruktur, Nutzungszonen, Grundrisstypen sowie belegbare Nutzungen. In: P. Freeman (ed.), Limes XVIII. Proceedings of the 18th International Congress of Roman Frontier Studies, held in Amman, Jordan (September 2000). British Archaeological Records International Series 1048 (Oxford 2002) 395–402.

Gugl 2013 · C. Gugl, Die Carnuntiner *canabae*. Ein Modell für römische Lagervorstädte. In: M. Doneus/C. Gugl/N. Doneus (eds.), Die Canabae von Carnuntum. Eine Modellstudie der Erforschung römischer Lagervorstädte. Von der Luftbildprospektion zur siedlungsarchäologischen Synthese. Der römische Limes in Österreich 47 (Wien 2013) 146–214.

Hanel 2007 · N. Hanel, Military Camps, Canabae, and Vici. The Archaeological evidence. In: P. Erdkamp (ed.), A Companion to Roman Britain (Oxford 2007) 395–416.

Heiligmann/Geppert 2003 · K. Heiligmann/K. Geppert, Sumelocenna. Römisches Stadtmuseum Rottenburg am Neckar. Führer zu archäologischen Denkmälern in Baden-Württemberg 18 (Stuttgart 2003).

Kaiser/Sommer 1994 · H. Kaiser/C. S. Sommer, Lopodunum I. Die römischen Befunde der Ausgrabungen an der Kellerei in Ladenburg, 1981–1985 und 1990. Forschungen und Berichte zur Vor- und Frühgeschichte in Baden-Württemberg 50 (Stuttgart 1994).

Kern 1998 · E. Kern, Le vicus des canabae. La problématique du faubourg de Strasbourg, Koenigshoffen. Caesarodunum 32, 1998, 201–215.

Klee 1986 · M. Klee, Der Nordvicus von Arae Flaviae. Neue Untersuchungen am nördlichen Stadtrand des römischen Rottweil. Arae Flaviae 3. Forschungen und Berichte zur Vor- und Frühgeschichte in Baden-Württemberg 18 (Stuttgart 1986).

Kleiss 1962 · W. Kleiss, Die öffentlichen Bauten von Cambodunum. Baubeschreibung und Rekonstruktion. Materialhefte zur Bayrischen Vorgeschichte 18 (Kallmünz 1962).

Kortüm/Lauber 2004 · K. Kortüm/J. Lauber, Walheim I. Das Kastell II und die nachfolgende Besiedlung. Forschungen und Berichte zur Vor- und Frühgeschichte in Baden-Württemberg 95 (Stuttgart 2004).

Loewinsohn 1999 · E. Loewinsohn, La A1 entre Lancia y Ad Legio VII. El miliario extravagante 71, 1999, 11–12.

Morillo 2012 · A. Morillo, Investigación científica y arqueología urbana en la ciudad de León. In: J. Beltrán/ O. Rodríguez (eds.), Hispaniae urbes. Investigaciones arqueológicas en ciudades históricas (Sevilla 2012) 211–256.

Morillo/Rodríguez Peinado 2013 · A. Morillo/L. Rodríguez Peinado, Acerca de unos retazos de tejido de lino procedentes del vicus romano de Puente Castro (León, España). Espacio, Tiempo y Forma. Serie 1. Prehistoria y Arqueología. Nueva Época 4, 6, 2013, 323–340.

Morillo/Salido 2015 · A. Morillo/J. Salido Domínguez, Military Vici in Roman Spain. In: L. Vagalinski/N. Sharankov (eds.), Limes XXII. Proceedings of the 22nd International Congress of Roman Frontier Studies Ruse, Bulgaria (Sofia 2015) 519–530.

Morillo et al. 2014 · A. Morillo/J. Salido/R. Durán Cabello, Aglomeraciones secundarias de carácter militar en Hispania. In: Catalina Galán Saunier (ed.), Homenaje a la professora Catalina Galán Saunier. Anejos de CuPAUAM 1 (Madrid 2014) 117–131.

Pérez Losada 2002 · F. Pérez Losada, Entre a cidade e a aldea. Estudio arqueohistórico dos "aglomerados secundarios" romanos en Galicia. Brigantium 13 (A Coruña 2002).

Piso 1991 · I. Piso, Die Inschriften vom Pfaffenberg und der Bereich der Canabae legionis. Tyche 6, 1991, 131–169.

Piso 2003 · I. Piso, Die Inschriften. Das Heiligtum des Jupiter Optimus Maximus auf dem Pfaffenberg/Carnuntum 1. Der römische Limes in Österreich 41, 1 (Vienna 2003).

Planck 1991 · D. Planck, Das römische Walheim. Ausgrabungen 1980–1988. Archäologische Informationen aus Baden-Württemberg 18 (Stuttgart 1991).

Roldán 1966 · J. M. Roldán Hervás, Sobre los acusativos con "ad" en el Itinerario de Antonino. Zephyrus 17, 1966, 109–120.

Salido 2014 · J. Salido Domínguez, *Horrea Militaria*. El aprovisionamiento de grano al ejército en el Occidente del Imperio Romano (Madrid 2010).

Salido/Bustamante 2014 · J. Salido Domínguez/M. Bustamante, Pistrina Hispaniae. Panaderías, molinerías y artesanado alimentario en la Hispania romana. Monographies Instrumentum 47 (Montagnac 2014).

Sommer 1988 · C. S. Sommer, Kastellvicus und Kastell. Untersuchungen zum Zugmantel im Taunus und zu den Kastellvici in Obergermanien und Rätien. Fundberichte aus Baden-Württemberg 13 (1988) 457–708.

Sommer 1989 · C. S. Sommer, The inner and outer relation of the military *vicus* to its fort. In: C. van Driel-Murray (ed.), Roman Military Equipment. The Sources of Evidence. Proceedings of the 5th Roman Military Equipment Conference. British Archaeological Records International Series 476 (Oxford 1989) 25–29.

Sommer 1997 · C. S. Sommer, Kastellvicus und Kastell. Modell für die Canabae legionis? Jahresbericht der Gesellschaft Pro Vindonissa 1997, 1997, 41–52.

Sommer 1999 · C. S. Sommer, The Roman Army in SW Germany as an Instrument of Colonisation. The Relationship of Forts to Military and Civilian Vici. In: A. Goldsworthy/I. Haynes (eds.), The Roman Army as a Community. Journal of Roman Archaeology Supplementary series 34 (Portsmouth 1999) 81–94.

Sommer 2004 · C. S. Sommer, Intra Leugam, Canabae, Kastellvici und der Obergermanisch-Raetische Limes. In: L. Ruscu/C. Ciongrandi/R. Ardevan (eds.), Orbis antiquus. Studia in honorem Ioannis Pisonis (Cluj-Napoca 2004) 312–321.

Sommer 2006 · C. S. Sommer, Military vici in Roman Britain revisited. In: R. J. A. Wilson (ed.), Romanitas. Essays on Roman archaeology in honour of Sheppard Frere on the occasion of his ninetieth birthday (Oxford 2006).

Sommer 2008 · C. S. Sommer, Die Römer in Künzing. Wege zu einer virtuellen Rekonstruktion des Kastellvicus oder: Versuch der Annäherung an ein Lebensbild. Bericht der Bayerischen Bodendenkmalpflege 49, 2008, 107–129.

Sommer/Lauber 1988 · C. S. Sommer/J. Lauber, Ausgrabungen im Municipium Arae Flaviae - Rottweil. Archäologische Ausgrabungen in Baden-Württemberg 1988, 1989, 91–96.

Teja 1990 · R. Teja, La carta 67 de San Cipriano a las comunidades cristianas de León-Astorga y Mérida. Algunos problemas y soluciones. In: A. González Blanco/J. M. Blázquez Martínez (eds.), Cristianismo y aculturación en tiempos del Imperio Romano. Antigüedad y Cristianismo 7 (Murcia 1990) 115–124.